PENGARUH LAMA PAPARAN RADIASI MEDAN ELEKTROMAGNETIK HANDPHONE TERHADAP KADAR MALONDIALDEHID DAN KOLESTEROL PADA TIKUS PUTIH (*Rattus norvegicus*) STRAIN WISTAR ALBINO

TESIS

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ABSTRAK

PENGARUH LAMA PAPARAN RADIASI MEDAN ELEKTROMAGNETIK *HANDPHONE* TERHADAP KADAR MALONDIALDEHID DAN KADAR KOLESTEROL PADA TIKUS (*Rattus norvegicus*) *STRAIN WISTAR* ALBINO

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Radiasi gelombang elektromagnetik *handphone* dapat menimbulkan gangguan pada organ tubuh dan bersifat karsinogenik. Malondialdehid terbentuk dari peroksidasi lipid yang disebabkan oleh paparan radiasi elektromagnetik *handphone*. Stress fisik yang ditimbulkan oleh radiasi elektromagnetik *handphone* dapat meningkatkan sekresi hormon kortisol dan menyebabkan *feed back* negatif, sehingga terjadi penurunan kadar HMG KoA reduktase, yang menyebabkan penurunan sintesis endogen kolesterol. Penelitian ini bertujuan untuk mengetahui kadar malondialdehid dan kadar kolesterol pada tikus *Rattus norvegicus* wistar albino yang di papar gelombang elektromagnetik *handphone*.

Penelitian eksperimen dengan desain penelitian *Post Test Only Control Group Design* ini menggunakan tikus wistar albino jantan yang diberi paparan radiasi elektromagnetik *handphone* 30, 60 dan 90 menit. Kadar malondialdehid di ukur dengan metode TBARs dan kadar kolesterol dengan metode CHOD_PAP. Uji statistik yang digunakan yaitu uji normalitas, parametrik *one-way ANOVA+ post-hoc test bonferroni.*

Hasil analisis menunjukan kadar malondialdehid pada kelompok perlakuan 30, 60 dan 90 menit adalah, 2,890nmol/ml, 3,306 nmol/ml dan 3,800 nmol/ml. Kadar kolesterol pada kelompok perlakuan 30,60, dan 90 menit adalah 71,,350 mg/dl, 71,178 mg/dl dan 70,916mg/dl.

Kesimpulan ada pegaruh yang bermakna antara lama paparan radiasi elektromagnetik *handphone* terhadap kadar malondialdehid dan kadar kolesterol tikus wistar albino jantan.

Kata kunci: Radiasi elektromagnetik,*handphone*, malondialdehid dan kolesterol

ABSTRACT

EFFECTS OF LONG EXPOSURE ELEKTROMAGNETIC FIELDS OF MOBILE PHONE ON MALONDIALDEHIDE LEVEL AND KOLESTEROL LEVEL *WISTAR* ALBINO RATS

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Mobile electromagnetic wave radiation can cause interference in body organs and is carcinogenic. Malondialdehyde is formed from lipid peroxidation caused by exposure to mobile electromagnetic radiation. Physical stress caused by electromagnetic radiation of mobile phones can increase the secretion of cortisol hormone and cause negative feed back, resulting in decreased levels of HMG CoA reductase, which leads to decreased endogenous cholesterol synthesis. This study aims to determine the levels of malondialdehid and cholesterol levels in Rattus norvegicus wistar albino mice in the electromagnetic wave of mobile phones.

Experimental research with Post Test Design Design Only Control Group Design uses male albino wistar rats given exposure to electromagnetic radiation of mobile phones 30, 60 and 90 minutes. Malondialdehid levels were measured by the method of TBARs and cholesterol levels by CHOD_PAP method. The statistical tests used were normality, parametric one-way ANOVA + post-hoc test bonferroni test.

The results showed that malondialdehyde levels in the treatment groups 30, 60 and 90 min were 2,890nmol / ml, 3,306 nmol / ml and 3,800 nmol / ml. Cholesterol levels in the treatment group 30.60, and 90 minutes were 71, 350 mg / dl, 71.178 mg / dl and 70.916 mg / dl.

Conclusion There is a significant influence between the duration of exposure of mobile electromagnetic radiation to malondialdehid levels and cholesterol levels of male albist wistar rats.

Keywords: Electromagnetic radiation, mobile phone, malondialdehyde and cholesterol